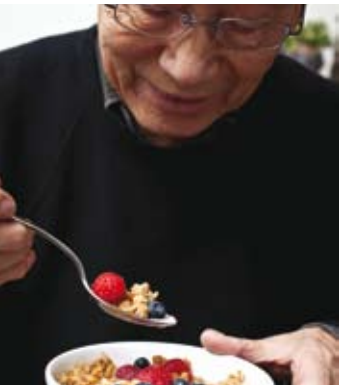
strokefoundation

Stop stroke. Save lives. End suffering.

Make yourself strokesafe™

Understand and prevent stroke



strokesafe for life

Brought to you by the National Stroke Foundation

Note: All information was correct at the time of printing August 2009.

About us

The National Stroke Foundation is a not-for-profit organisation that works with the public, government, health professionals, patients, carers and stroke survivors to reduce the impact of stroke on the Australian community.

Our challenge is to save 110,000 Australians from death and disability due to stroke over 10 years.

We will achieve this by:

- Educating the public about the risk factors and signs of stroke and promoting healthy lifestyles.
- Working with all stakeholders to develop and implement policy on the prevention and management of stroke.
- Encouraging the development of comprehensive and coordinated services for all stroke survivors and their families.
- Encouraging and facilitating stroke research.

Statistics on stroke

- Australians will suffer more than half a million first ever strokes in the next 10 years.
- One in three people die within a year of having a stroke.
- Stroke kills more women than breast cancer.
- Almost one in five people who experience a stroke are under the age of 55.
- Men are more likely to suffer a stroke at a younger age.

Stroke is the second single greatest killer and one of the leading causes of disability amongst adults in Australia.

What is a stroke?

A stroke is not a heart attack. A stroke occurs when the supply of blood to the brain is suddenly disrupted. Blood is carried to the brain by blood vessels called arteries. Blood may stop moving through an artery because the artery is blocked by a clot or plaque, or because the artery breaks or bursts.

When blood stops flowing, the brain does not receive the oxygen it needs, and therefore brain cells in the area die and permanent damage may be done. Some strokes are fatal while others cause permanent or temporary disability. Some people are able to make a full recovery after a stroke.

Imagine:

- Waking up one morning and being permanently paralysed on one side of your body.
- Being perfectly able to understand words, but unable to speak or write.
- Having to re-learn how to perform the simplest activities of daily living – eating, dressing and bathing.
- Your life, and the lives of your family and friends being rearranged.

These are just some of the life-altering ways stroke can affect those it strikes.

What is a transient ischaemic attack (TIA)?

A transient ischaemic attack (TIA) happens when the blood supply to the brain is interrupted for a short period of time. It is often called a “mini-stroke”. The signs are the same as those of a stroke, but they do not last as long. The signs of a TIA may disappear in a few minutes and last no longer than 24 hours. They are often a warning of impending stroke.

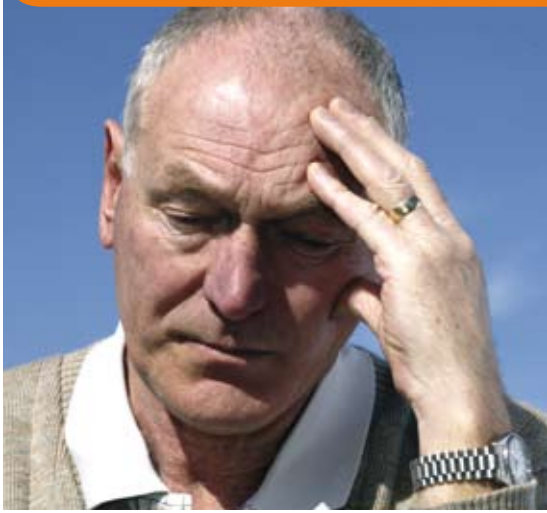
A TIA should never be ignored

TIA episodes usually last only a few minutes but may last for several hours. They generally disappear quickly and unfortunately, are often ignored. Just like a stroke, a TIA will require emergency treatment. About one in five people who have a TIA will have a major stroke within the next three months.

The doctor will try to find the underlying cause of the TIA and then organise treatment to lower your risk of another TIA or stroke.

TIAs should be regarded as a warning sign that the person is at risk of a stroke and should be investigated promptly.

It is important, if transient stroke symptoms occur to see a doctor immediately, even if the signs go away.



Stroke is a medical emergency and time is critical. If you recognise the signs of stroke in yourself or someone you are with, call 000 immediately.

Recognising signs of stroke or TIA

The **FAST** test is an easy way to remember and recognise the signs of stroke or TIA. **FAST** – **F**ace, **A**rms, **S**peech and **T**ime. Using the **FAST** test involves asking three simple questions:

Face – check their face.
Has their mouth drooped?

Arms – can they lift both arms?

Speech – is their speech slurred?
Do they understand you?

Time is critical – if you see any of these sign, call 000 now!

The signs of stroke could be any one, or a combination of the following:

- Weakness, numbness or paralysis – in the face, arm or leg on either or both sides of the body.
- Difficulty speaking or understanding.
- Dizziness, loss of balance or unexplained fall.
- Loss of vision, sudden blurred or decreased vision in one or both eyes.
- Headache – usually severe and abrupt onset or a change in the pattern of headaches.
- Difficulty swallowing.

The signs of stroke may occur alone or in combination and can last a few seconds or up to 24 hours and then disappear. When symptoms disappear within 24 hours, this episode is a mini stroke or transient ischaemic attack (TIA).

If you or someone else experience the signs of stroke, no matter how long they last, call 000.

Why is stroke a medical emergency?

Emergency medical treatment is crucial for three reasons:

1. Only a doctor can decide whether you are suffering a stroke. There are a number of conditions that can look like a stroke and these need to be ruled out urgently.
2. Some treatments for stroke must be given within three hours of the stroke starting or presentation of stroke symptoms.
3. You will need to be assessed by a doctor who will look at treatments to prevent another stroke.

If you are suffering a stroke, emergency medical treatment could save your life and reduce the likelihood of permanent brain damage. The longer a stroke remains untreated, the greater the chance of stroke related brain damage. Emergency medical treatment soon after stroke symptoms begin, improves the chances of survival and successful rehabilitation.

Stroke is always a medical emergency. Even if the symptoms don't cause pain or go away quickly - call 000 immediately.

How does a stroke happen?

A stroke can happen in two main ways. Either there is a blood clot or plaque that blocks an artery in the brain, or a blood vessel in the brain breaks or ruptures that causes a bleed in the brain.

1. A blocked artery

A stroke that is caused by a blood clot is called an **ischaemic stroke.**

In everyday life, blood clotting is beneficial. When you are bleeding from a wound, blood clots work to slow and eventually stop the bleeding. In the case of stroke, however, blood clots are dangerous because they can block arteries and cut off blood flow.

There are two ways an ischaemic stroke can occur:

1.1 Embolic stroke

If a blood clot forms somewhere in the body (usually the heart) it can travel through the bloodstream to the brain. Once in the brain, the clot travels to a blood vessel that's too small for it to pass through. It gets stuck there and stops blood from getting through. These kinds of strokes are called embolic strokes.

1.2 Thrombotic stroke

As the blood flows through the arteries, it may leave behind cholesterol-laden 'plaques' that stick to the inner wall of the artery. Over time, these plaques can increase in size and narrow or block the artery and stop blood getting through. In the case of stroke, the plaques most often affect the major arteries in the neck taking blood to the brain. Strokes caused in this way are called thrombotic strokes.

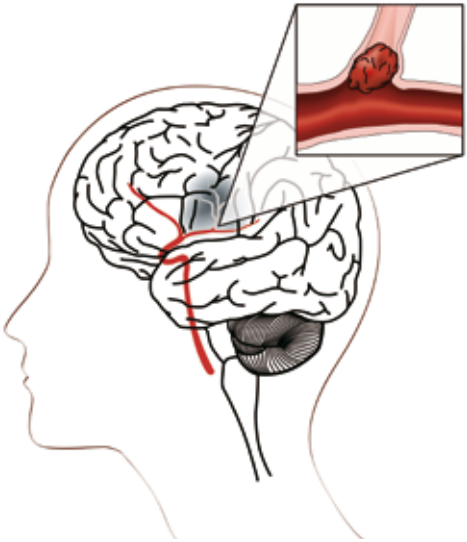


Diagram 1: Ischaemic stroke (Embolic and Thrombotic)

2. A bleed in the brain

Strokes caused by a break in the wall of a blood vessel in the brain are called **haemorrhagic strokes.**

This causes blood to leak into the brain, again stopping the delivery of oxygen and nutrients.

Haemorrhagic stroke can be caused by a number of disorders which affect the blood vessels, including long-standing high blood pressure and cerebral aneurysms.

An aneurysm is a weak or thin spot on a blood vessel wall. The weak spots that cause aneurysms are usually present at birth. Aneurysms develop over a number of years and usually don't cause detectable problems until they break.

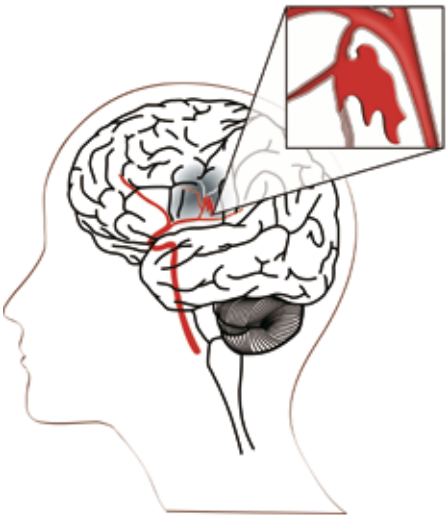


Diagram 2: Haemorrhagic stroke (Subarachnoid and Intracerebral)

There are two types of haemorrhagic stroke: subarachnoid and intracerebral.

These two terms refer to areas of the brain where the stroke has occurred.

In a **subarachnoid haemorrhage**, bleeding occurs under the thin, delicate membrane surrounding the brain.

In an **intracerebral haemorrhage**, bleeding occurs within the brain itself.

How can I prevent stroke?

Know the risk factors

Some of the risk factors for stroke cannot be controlled. These include age, gender and a family history of stroke.

However, there are a number of risk factors for stroke you can control to reduce your chance of having a stroke. Blood pressure is one of the most important known risk factors for stroke.

HIGH

NORMAL

High blood pressure is when your blood pressure is over **140/90**. This is known as hypertension.

Normal blood pressure is around **120/80**.
High normal blood pressure is around **120/80** and **140/90**.

* Blood pressure does not stay the same all the time.
Levels for normal and high blood pressure are a guide only

Lower your risk

Risk factor
High blood pressure
Smoking
High blood cholesterol
Diabetes
Being overweight (obesity)
Poor diet and inactivity
Excessive alcohol
Atrial Fibrillation (AF)

How it affects your risk of stroke	What can you do to lower your risk?	Key Message
Causes damage to blood vessel walls eventually leading to a stroke. High blood pressure is one of the most important risk factors for stroke.	• Be smoke free • Maintain a healthy lifestyle • Reduce salt intake • Limit alcohol intake • Your doctor may prescribe medication	Know your blood pressure and check it regularly.
Increases blood pressure and reduces oxygen in the blood.	Stop smoking. Call QUIT line on 13 18 48.	Be smoke free.
Contributes to blood vessel disease often leading to a stroke.	• Maintain a healthy lifestyle • Choose foods low in saturated fat • Your doctor may prescribe medication	Check you blood cholesterol level.
Can cause damage to the circulatory system and can increase risk of stroke.	• Maintain a healthy body weight • Keep blood pressure and blood cholesterol levels down	Talk to your doctor about keeping diabetes under control.
High body fat can contribute to high blood pressure, cholesterol and lead to heart disease, type 2 diabetes and stroke.	• Maintain a healthy body weight • Be physically active	Talk to your doctor or a nutritionist for help.
Can contribute to high cholesterol, high blood pressure and lead to obesity increasing risk of stroke.	• Maintain a healthy body weight • Be physically active • Eat foods that are good for you	Be active everyday.
Can raise blood pressure and increase your risk of stroke.	• Stay within recommended limits (no more than 2 drinks per day for men, or one drink per day for women)	Limit your alcohol intake.
You are more at risk of stroke if you have an irregular pulse due to atrial fibrillation.	If you experience symptoms such as palpitations, weakness, faintness or breathlessness, see your doctor for diagnosis or treatment	See your doctor for diagnosis or treatment.

The more risk factors you have, the higher your chances of having a stroke. Individuals with the highest risk of stroke include those with multiple risk factors and those who have already suffered a transient ischaemic attack (TIA), stroke or heart attack.

The more risk factors you have the greater your risk of stroke is. See your doctor if you have any concerns about your risk factors.

Surgery to reduce your risk of stroke

The two carotid arteries are the main arteries carrying blood to the brain. They can become narrowed at a point in the neck by a build up of cholesterol and other fatty material termed "plaque". If your carotid arteries have become partially blocked, resulting in reduced blood flow to the brain, you may be advised to have an operation called a **carotid endarterectomy**.

Carotid endarterectomy involves removing the plaque from the area of narrowing and opening the artery. This improves blood flow to the brain and lowers the risk of blood clots or pieces of plaque breaking off and blocking blood flow. It is useful for people who have severe, but not total, blockage of their carotid arteries.

Sometimes both carotid arteries need surgery, but they are usually done one at a time in separate operations. Though the results are usually very good, the carotid endarterectomy operation itself carries with it a small risk of causing stroke. In expert surgical hands, however, the benefits from the surgery outweigh the risks. As with any major surgical procedure, carefully discuss the situation with your doctors before making a decision.

To help keep the artery open, sometimes they may surgically put in a stent, which is a small expandable tube. Again there are risks associated with this procedure so speak to your doctors before making any decisions.

Stroke prevention drugs

Research has shown several drugs to be extremely effective in the fight to prevent stroke. The most effective proven medical approaches to stroke prevention fall into three categories:

1. Antihypertensives to reduce blood pressure
2. Antiplatelet agents
3. Anticoagulants which both prevent blood clots from forming or growing.

Antihypertensives

Lowering blood pressure to normal ranges can reduce the risk of stroke dramatically. Blood pressure lowering reduces the risk of both types of stroke, ischaemic (blocked artery) and haemorrhagic (bleed in the brain). When blood pressure cannot be controlled through lifestyle modification alone, your doctor may prescribe medication to lower your blood pressure (antihypertensives).

There are many antihypertensive drugs from which your doctor can choose. If you have already had a stroke or a TIA, the use of the blood pressure lowering drug perindopril in combination with indapamide has been shown to reduce the chance of having a further stroke significantly.

It is important to take your medication as prescribed. Do not make decisions about stopping your medication without talking to your doctor.

Antiplatelet agents

Platelets are a component of the blood which stick together to form a plug. This platelet plug then grows to form a blood clot that is important in stopping bleeding. Antiplatelet drugs play a key role by keeping the platelets from sticking together and forming abnormal clots.

Aspirin is the antiplatelet drug most commonly prescribed to help prevent stroke. It is not recommended for use in haemorrhagic stroke. Although aspirin is a non-prescribed drug, some people can't take aspirin because of a bleeding tendency or for other reasons.

Other antiplatelet drugs include dipyridamole, ticlopidine or clopidogrel. These medications need to be prescribed by a doctor and are for people who have had a previous stroke or TIA. Dipyridamole may be given with aspirin but clopidogrel is usually prescribed on its own. These medications can be particularly useful for people who cannot take aspirin.

Anticoagulants

Anticoagulant drugs interfere with the production of certain blood components that are necessary for the formation of blood clots. The most effective anticoagulant drug for ischaemic stroke prevention is warfarin.

Warfarin helps prevent stroke by keeping existing blood clots from growing larger and by helping to keep new clots from forming. The drug is typically prescribed for older patients with atrial fibrillation (an irregular pulse).

It is important to consult your doctor before taking aspirin on a regular basis to prevent stroke.

Myths about stroke

Myth: Stroke and heart attack are the same.

Reality: Stroke occurs in and affects the brain. Both of these health problems involve the circulatory system and can be caused by blood clots. Both require emergency treatment. Think of stroke as a brain attack.

Myth: Stroke is unpreventable. People have no control over it.

Reality: Early detection and effective control of stroke risk factors can greatly reduce the chances of having a stroke.

Myth: Stroke hits without warning.

Reality: Many strokes occur after brief episodes of stroke symptoms, also known as transient ischaemic attacks (TIAs). These are temporary interruptions of the blood supply to an area of the brain.

Myth: Stroke only happens to older people.

Reality: Around a third of stroke patients are under age 65. Taking steps to prevent stroke should begin early in life and continue over their lifespan. A stroke that happens after age 65 is the likely result of a long-term process that started with untreated medical conditions, lifestyle choices and health habits formed in young adulthood. Stroke can also occur in children.

Myth: During stroke, brain cells die immediately, causing instant brain damage.

Reality: Brain cells don't die all at once during stroke. Cells in the areas directly affected by the blood vessel blockage or breakage begin dying within minutes to a few hours. However, brain cells in the area aren't the only ones in danger. Through a process called secondary injury, dying brain cells set off a "chain reaction" of electrical and chemical events. These events endanger, and can kill, brain cells in the surrounding area. As a result, the stroke survivor may experience more severe disability. These damage processes can potentially be treated if patients present to hospital within three hours of stroke onset.

Myth: Stroke is not a medical emergency.

Reality: An emergency response to stroke is critical. At the hospital, doctors will confirm the diagnosis of stroke and perform tests – including a CT scan – to determine the size, location, and cause. This is important because medical and surgical treatment options will vary depending on whether the stroke resulted from a blocked artery or a haemorrhage (bleed). Some medications must be given within the first three hours of the stroke. If the stroke symptoms prove to be a TIA, doctors can determine the underlying cause and work with you to prevent a potentially fatal or disabling stroke.

StrokeLine

The National Stroke Foundation's StrokeLine provides information about stroke prevention, recovery and support. Our qualified health professionals are here for you when you need comprehensive information and help.

Remember, stroke is largely preventable, so contact us today to discover the changes you can make to reduce your risk of stroke.

Call our toll free service on **1800 787 653** (open business hours EST across Australia, a message service is available outside these hours). If you leave a message, a health professional will return your call the next working day

How you can help

Stroke is responsible for 1 in 10 deaths in Australia. We need to raise urgently needed funds to continue our work in a number of areas to reduce the incidence and burden of stroke in Australia. Please show your support and donate today.

Visit **www.strokefoundation.com.au** or call **1300 194 196**.

More information

More information is available from the National Stroke Foundation about:

- High blood pressure and stroke
- High cholesterol and stroke
- Irregular heartbeat and stroke
- Transient Ischaemic Attack (TIA)

National Stroke Foundation

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